

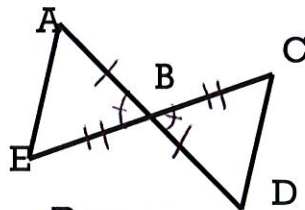
Name: ANSWER KEY

Date: _____

Per.: _____

Given: B is the midpoint of \overline{AD} & \overline{EC}

Prove: $\triangle ABE \cong \triangle DBC$



Statement	Reason
1. B is the midpt. of \overline{AD} & \overline{EC}	1. <u>Given</u>
2. $\overline{AB} \cong \overline{DB}$	2. <u>def. of midpoint</u>
3. $\overline{EB} \cong \overline{CB}$	3. <u>def. of midpoint</u>
4. $\angle ABE \cong \angle DBC$	4. <u>vertical angles are \cong</u>
5. $\triangle ABE \cong \triangle DBC$	5. <u>SAS</u>

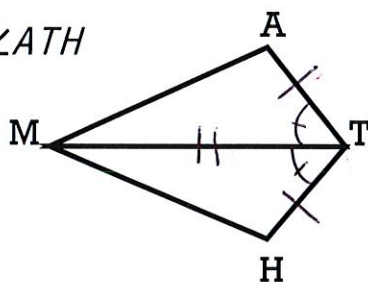
MARK THE
DIAGRAMS!

* Note: You may have done your angle + triangle names different
(Ex: $\angle ABE$ or $\angle EBA$)

* Note: If you had a completely blank copy, you may have your steps in a different order.

Given: $\overline{AT} \cong \overline{HT}$
 \overline{MT} bisects $\angle ATH$

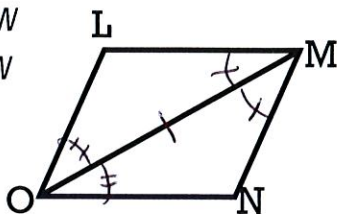
Prove: $\triangle TAM \cong \triangle THM$



Statement	Reason
1. $\overline{AT} \cong \overline{HT}$	1. <u>Given</u>
2. \overline{MT} bisects $\angle ATH$	2. <u>Given</u>
3. $\angle ATM \cong \angle HTM$	3. <u>def. of angle bisector</u>
4. $\overline{MT} \cong \overline{MT}$	4. <u>Reflexive Property</u>
5. $\triangle TAM \cong \triangle THM$	5. <u>SAS</u>

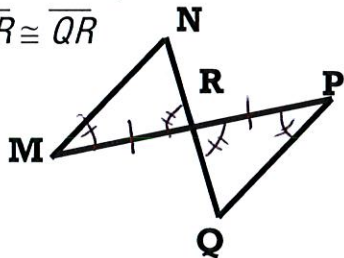
Given: \overline{MO} bisects $\angle LMN$
 \overline{MO} bisects $\angle LON$

Prove: $\triangle OLM \cong \triangle ONM$



Statement	Reason
1. \overline{MO} bisects $\angle LMN$	1. Given
2. \overline{MO} bisects $\angle LON$	2. Given
3. $\angle LMO \cong \angle NMO$	3. def. of angle bisector
4. $\angle LOM \cong \angle NOM$	4. def. of angle bisector
5. $\overline{OM} \cong \overline{OM}$	5. Reflexive Property
6. $\triangle OLM \cong \triangle ONM$	6. ASA

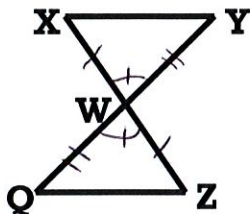
2. **Given:** $\overline{MR} \cong \overline{RP}$, $\angle M \cong \angle P$
Prove: $\overline{NR} \cong \overline{QR}$



Statement	Reason
1. $\overline{MR} \cong \overline{RP}$	1. Given
2. $\angle M \cong \angle P$	2. Given
3. $\angle NRQ \cong \angle PRM$	3. Vertical angles are congruent
4. $\triangle MRN \cong \triangle RPQ$	4. ASA
5. $\overline{NR} \cong \overline{QR}$	5. CPCTC

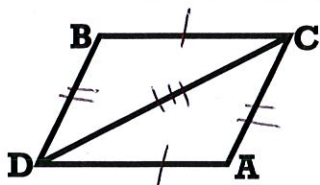
3. **Given:** \overline{QY} & \overline{XZ} bisect each other.

Prove: $\angle Q \cong \angle Y$



Statement	Reason
1. \overline{QY} & \overline{XZ} bisect each other	1. Given
2. $\overline{XW} \cong \overline{ZW}$	2. def. of bisect.
3. $\overline{YW} \cong \overline{QW}$	3. def. of bisect.
4. $\angle XWY \cong \angle ZWQ$	4. vertical angles
5. $\triangle XYW \cong \triangle ZQW$	5. SAS
6. $\angle Q \cong \angle Y$	6. CPCTC

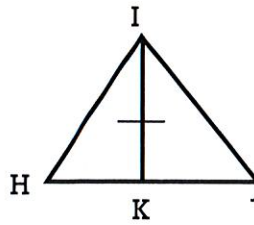
2. **Given:** $\overline{BC} \cong \overline{AD}$, $\overline{AC} \cong \overline{BD}$
Prove: $\angle BCD \cong \angle ADC$



Statement	Reason
1. $\overline{BC} \cong \overline{AD}$	1. Given
2. $\overline{AC} \cong \overline{BD}$	2. Given
3. $\overline{DC} \cong \overline{DC}$	3. Reflexive property
4. $\triangle BDC \cong \triangle ACD$	4. SSS
5. $\angle BCD \cong \angle ADC$	5. CPCTC

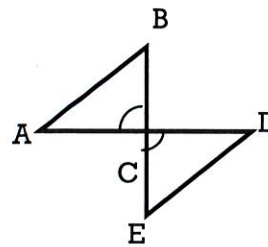
If you have an overlapping side

$$\overline{IK} \cong \overline{IK} \rightarrow \text{Reflexive Property}$$



If you have vertical angles (bowtie shape)

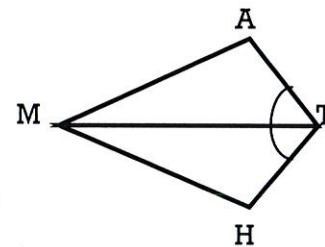
$$\angle ACB \cong \angle DCE \rightarrow \text{V.A.T}$$



If you have an angle bisector

$$\overline{MT} \text{ bisects } \angle ATH \rightarrow \text{Given}$$

$$\angle ATM \cong \angle HTM \rightarrow \text{definition of angle bisector}$$



If you have a midpoint

$$X \text{ is the midpoint of } \overline{WY} \rightarrow \text{Given}$$

$$\overline{WX} \cong \overline{YX} \rightarrow \text{definition of midpoint}$$

